

Even or Odd

Reporting Category Number and Number Sense

Topic Recognizing even and odd numbers

Materials

- Counters
- Large container (e.g., box, bag)
- Hundred chart
- Blue and red pencils or crayons

Vocabulary

skip count, equal, pair, pattern, even, odd

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Begin by having each student grab a handful of counters from a large container. Instruct students to create as many pairs as they can with their counters. When they have finished creating pairs, have them count the total number of counters they have by skip counting the pairs by twos. Ask each student with a leftover counter to raise a hand.
2. Display a large hundred chart. Ask the students with leftover counters to announce their total numbers of counters, and record these numbers on the displayed hundred chart by shading them blue. Inform students that because each of these numbers had one counter left over when making pairs, each one is an “odd number.”
3. Ask each student who had no counters left over to raise a hand. Ask these students to announce their total numbers of counters, and record these numbers on the hundred chart by shading them red. Tell students that because each of these numbers had no counters left over when making pairs, each of these numbers is an “even number.”
4. Put students into pairs, and redistribute counters so that each pair has 20 counters. Give each pair two copies of a hundred chart and blue and red pencils or crayons. Instruct partners to use their counters to determine what other numbers up to 20 are odd or even and to color the odd numbers on their hundred charts blue and the even numbers red.
5. Ask students to describe the pattern they see on their charts. They should notice that every other number is either blue (odd) or red (even). Have students continue coloring the pattern on their charts up to the number 50.
6. Ask for volunteers to share their discoveries, and record them on the display hundred chart. Discuss why the chart has columns in alternate colors, asking students what is the same in each of the columns (the digit in the ones place in each number). Emphasize that the digit in the ones place for each even number is 0, 2, 4, 6, or 8 and that the digit in the ones place for each odd number is 1, 3, 5, 7, or 9.

7. Write several numbers between 50 and 100 on the board, and ask students to identify whether each is odd or even, based on the pattern they have observed.

Assessment

- **Questions**
 - What characteristic do all even numbers have in common?
 - What characteristic do all odd numbers have in common?
 - How can skip counting be used to help determine whether a number is even or odd?
- **Journal/Writing Prompts**
 - Liam has 138 cards in his card collection. He is uncertain whether he has an even or odd number of cards. Explain to Liam how he can determine the answer.
 - Coach Diez can invite 14 or 15 players to join her new soccer team. During practice, she plans to have her players pair up to perform different drills. Explain how many players Coach Diez should invite and why.
- **Other**
 - Monitor partners as they work, and check to see that they are using their counters correctly. Assist, as needed.
 - Have students create a “One-Minute Paper,” answering the following questions on paper in one minute: “What was the most important thing you learned? What important question remains unanswered?” Be sure to clear up any remaining questions students may have.

Extensions and Connections (for all students)

- Have pairs of students play “Evens Take All.” Each pair uses a deck of cards with the face cards removed. Have students deal the decks so that each player has an equal number of cards. To play, each player draws two cards from his/her pile of cards and turns them face-up to create a two-digit number. The student who has an even number takes all four face-up cards, which remain face-up and out of play. If both students have an even number, both simply keep the cards they already have. Play continues until all cards have been taken. The player with the most cards at the end is the winner.
- Have students play “Popcorn.” To start, students are seated in their chairs and the teacher calls out some randomly chosen numbers. When an odd number is called, students stay seated, but when an even number is called, students “pop” up from their chairs and say “popcorn!”
- Have students write stories or create songs about even and odd numbers.

Strategies for Differentiation

- Have students explore adding numbers together to discover the results: $\text{odd} + \text{odd} = \text{even}$, $\text{even} + \text{even} = \text{even}$, $\text{odd} + \text{even} = \text{odd}$, $\text{even} + \text{odd} = \text{odd}$
- Have student explore subtracting numbers to discover the results: $\text{odd} - \text{odd} = \text{even}$, $\text{even} - \text{even} = \text{even}$, $\text{odd} - \text{even} = \text{odd}$, $\text{even} - \text{odd} = \text{odd}$.